Application No. 09/808,224
Filed: March 14, 2001
Group Art Unit: 1645
Confirmation No.: 2803

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A process for identifying cell-specific target structures, the process comprising the following steps:

(a) automatically depositing a reagent solution Y1 that includes at least one marker molecule on an object X1 which contains cells and/or cell membranes originating from a cell or tissue sample;

(b) allowing the reagent solution Y1 to react, and automatically detecting at least one marker pattern of the object X1 labeled with the reagent solution Y1;

(c) removing said reagent solution Y1 before or after detecting the marker pattern, and repeating steps (a) and (b) with further reagent solutions Yn (n = 2, 3, ..., N) each containing said at least one marker molecule, at least another marker molecule, or both;

(d) combining the marker patterns detected in step (b) to give a complex molecular combination pattern of object X1;

(e) repeating steps (a) to (d) with at least one further object Xn (n = 2, 3, ..., N) containing other cells and/or other cell membranes that originate from a different cell or tissue sample;

(f) determining at least one difference between the combination pattern of object X1 and that of object Xn;

(g) identifying at least one reagent solution Y1 or Yn whose marker pattern causes the difference determined in step (f);

(h) selecting molecules or molecular complexes bound by at least the one marker molecule of the reagent solution Y1 or Yn identified in step (g) from a homogenate of cells and/or cell

membranes originating from the cell or tissue sample of the object Xn differing as determined in step (f); and

(i) biochemically characterizing the molecules or molecular complexes selected in step (h).

2. (Previously Presented) The process as claimed in claim 1 wherein the homogenate used in step (h) will be separated into individual homogenate ingredients by means of a molecule or a molecular complex separation process, prior to step (h).

3. (Previously Presented) The process as claimed in claim 1 wherein said object X1 exhibits cells and/or cell membranes originating from a cell or tissue sample of a sick patient, and wherein at least one other object Xn exhibits cells and/or cell membranes originating from a cell or tissue sample of a healthy test person.

4. (Previously Presented) The process as claimed in claim 1 wherein said process comprises the following parallel step:

(x) preparing a protein expression profile of a sample portion each of said cell or tissue samples from which cells and/or cell membranes will be used from objects X1 and Xn, and comparing the protein expression profile to be associated with object X1 with that to be associated with object Xn, which comparison will show at least one difference.

5. (Previously Presented) The process as claimed in claim 4 wherein said process further comprises the step:

(y) examining at least one protein, at least one protein modification, or both causing the difference detected in step

(x) as to whether said protein binds to at least one marker molecule of the reagent solution Y1 or Yn identified in step (g).

6. (Original) The process as claimed in claim 4 wherein at least one marker molecule used in step (a) and/or step (c) binds at least one protein and/or at least one protein modification causing the difference detected in step (x).

7. (Previously Presented) The process as claimed in claim 1 wherein at least one marker molecule used in step (a) and/or step (c) is fluorochrome-conjugated.

8. (Previously Presented) The process as claimed in claim 1 wherein at least one marker molecule used in step (a) and/or step (c) is an antibody.

9. (Original) The process as claimed in claim 8 wherein said antibody is taken from an antibody library, said antibody library being of the naive or of the non-naive type.

10. (Previously Presented) The process as claimed in claim 1 wherein at least one marker molecule used in step (a) and/or step (c) is a ligand.

11. (Original) The process as claimed in claim 10 wherein said ligand is taken from a ligand library, said ligand library being of the naive or of the non-naive type.

Application No. 09/808,224
Filed: March 14, 2001
Group Art Unit: 1645
Confirmation No.: 2803

12. (Currently Amended) The process as claimed in claim 1 wherein, after removing the reagent solution according to step (c), a rinsing step follows in which a rinsing solution is deposited on object X1 and removed again after a certain period of time.

13. (Previously Presented) The process as claimed in claim 1 wherein step (d) is performed by means of computer-aided image overlay.

14. (Previously Presented) The process as claimed in claim 1 wherein the process comprises randomly repeatable bleaching cycles, in particular after step (b).

15. (Previously Presented) The process as claimed in claim 3 wherein:

said process comprises the following parallel steps:

(x) preparing a protein expression profile of a sample portion each of said cell or tissue samples from which cells and/or cell membranes will be used from objects X1 and Xn, and comparing the protein expression profile to be associated with object X1 with that to be associated with object Xn, which comparison will show at least one difference; and

(y) examining at least one protein and/or at least one protein modification causing the difference detected in step (x) as to whether it binds to at least one marker molecule of the reagent solution Y1 or Yn identified in step (g), wherein at least one marker molecule used in step (a) and/or step (c) binds at least one protein and/or at least one protein modification causing the difference detected in step (x);

at least one marker molecule used in step (a) and/or step (c) is fluorochrome-conjugated;

at least one marker molecule used in step (a) and/or step (c) is an antibody, said antibody is taken from an antibody library, said antibody library being of the naive or of the non-naive type;

at least one marker molecule used in step (a) and/or step (c) is a ligand, said ligand being taken from a ligand library, said ligand library being of the naive or of the non-naive type;

after removing the reagent solution according to step (c), a rinsing step follows in which a rinsing solution is deposited on object X1 and removed again after a certain period of time;

step (d) is performed by means of computer-aided image overlay; and

the process comprises randomly repeatable bleaching cycles, in particular after step (b).